

Work Order ID 102840

\*102840\*

Page 1

June-12-13 9:15:10 AM

Item ID: 646.3311 **646.3311** Accept **\*N900040100\*** Setup Start **\*NS1\***  
 Revision ID: **D 102840** Stop **\*NS2\***  
 Item Name: RH Half  
 Start Date: 6/11/13 Start Qty: 10.00 **\*10\*** Cust Item ID:  
 Required Date: 6/11/13 Req'd Qty: 10.00 **\*10\*** Customer:  
 Reference:

Approvals: Process Plan: MLJ Date: 13-06-14 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_  
 Run Start **\*NR1\***  
 Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
646.3300	N/C

110	HAAS CNC VERTICAL MACHINING #1	0.00				10	φ		DAS 08 9-89
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**\*110\***

HAAS I-

HAAS CNC vertical machine #1

Memo

I-Machine per folio FB154

DWG REV: N/CFOLIO REV: AA

Blank 13.375

2- deburr and break all sharp edges

120	QC2- Inspect parts off machine FAI/FAIB	0.00				10	φ		DAS 08 9-89
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**\*120\***

QC

Quality Control

Memo

0.60

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other  _____ _____ _____
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# Work Order ID 102840

\*102840\*

Page 2

June-12-13 9:15:10 AM

Item ID: 646.3311 Accept \*N900040100\* Setup Start \*NS1\*  
Revision ID: Stop \*NS2\*  
Item Name: RH Half  
Start Date: 6/11/13 Start Qty: 10.00 \*10\* Cust Item ID:  
Required Date: 6/11/13 Req'd Qty: 10.00 \*10\* Customer:  
Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start \*NR1\*  
QC: Date: SPC (Y/N): Date: Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	QC8- Inspect parts - second check	0.00							
*130*						10			
QC	Memo	0.00							
Quality Control									
131		0.00							
*131*									
HandFinish	Memo	0.00							
Hand Finishing	CLEAN AND REMOVE ALL PART MARKING								
140	Outsource process-Anodize per QSI017 4.1.10.1	0.00							
*140*									
Outsource4	Memo	0.00							
Outsource process - Anodize	Issue P/O to ATG : 20518								
	1- Black Anodize as per Dwg 646.3300								
	2- PRIME AS PER DWG, SEE NOTE #2								
	Certification of Conformity is required								

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
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Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence
		<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other

# Work Order ID 102840

\*102840\*

Page 3

June-12-13 9:15:10 AM

Item ID: 646.3311

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: RH Half

Start Date: 6/11/13 Start Qty: 10.00

\*10\*

Cust Item ID:

Required Date: 6/11/13 Req'd Qty: 10.00

\*10\*

Customer:

Reference:

Run Start \*NR1\*

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop \*NR2\*

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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150 Receive & Inspect for Damage & Mat'l Certs 0.00

\*150\*

Packaging Memo 0.00

Packaging

1613/23 (10)

155 QC5- Inspect part completeness to step on W/O 0.00

\*155\*

QC Memo 0.00

Quality Control

DA  
27  
13724

10

180 Identify as per dwg & Stock Location: ST520 0.00

\*180\*

Packaging Memo 0.00

Packaging

\*\*\*IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV\*\*\*

10x 11.10 13-07-24

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order update only ☐

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Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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**Work Order ID 102840****\*102840\***

Page 4

June-12-13 9:15:10 AM

Item ID: 646.3311

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: RH Half

Start Date: 6/11/13 Start Qty: 10.00

**\*10\***

Cust Item ID:

Required Date: 6/11/13 Req'd Qty: 10.00

**\*10\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	QC21- Final Inspection - Work Order Release	0.00							
<b>*190*</b>									
QC	Memo	0.00							
Quality Control									

MLJ 13-07-26

MF

13-7-24

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
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Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
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Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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# Picklist Print

June-12-13 9:15:10 AM

Page 1

Work Order ID: 102840

Parent Item: 646.3311

Parent Item Name: RH Half

Start Date: 6/11/13

Required Date: 6/11/13

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP REV:A NEW ISSUE 12/11/27 JFS VERIFY BY: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M7075T6B7.000X2.000		Purchased	No				f	16.8800		11.736842		LA 13/07/04	
7075-T6 BAR 7.000" X 2.000" (order in billets)													

Location	Loc Qty	Loc Code
MAT001	16.88	
124030	6.92	
125584	9.96	

→ 126143

10.0 blanks (billets) = 11.1458<sup>ft</sup>

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

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Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
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Handling/Pre									
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Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other  _____ _____ _____
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INDUSTRIES, INC.

DWG NO. 646.3300

REV: N/C

PREPARED  
BY B. PETERS

DATE: 12/05/12

EFFECT ON DWG  
☐ INC. ☒ UNINC.

DWG TITLE: UPPER CUTTER ASSY

APPROVED BY:

ENGR

MFG

QC

EFF:
------

NEXT ORDER

TRANSACTION CODES (TC)  
A-ADD C-CREATE  
R-REVISE D-DELETE

REASON:

REVISÉD ORDINATE DIMENSION.

ECR:	
------	--

D-12-025



UNCONFIRMED

\$162,171.00

U.S. - 1998

566

102840 MW

13-06-14

**SHEET 4, ZONE B8 IS:**

DOCUMENTS EFFECTED:

☐ RFMS ☐ MDL ☐ INSTALL INSTRUC ☐ ICA ☐ BOM

CHANGE CATEGORY  
☐ MAJOR ☒ MINOR

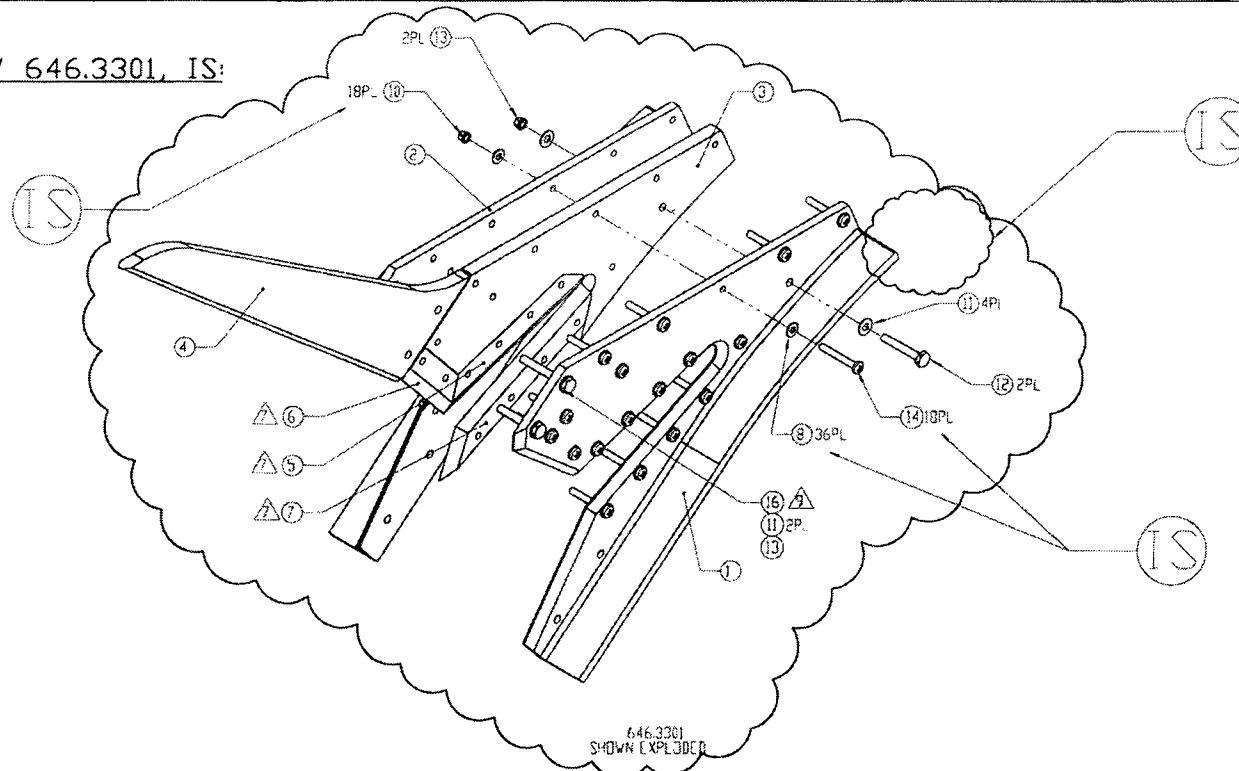
DER REVIEW REQUIRED  
☐ YES ☒ NO



102840

APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICL NO. 02196		SHEET 1 OF 2	
	DWG NO. 646.3300	REV: N/C	PREPARED BY S. HUFF	DATE: 01/05/09
	EFFECT ON DWG <input type="checkbox"/> INC. <input checked="" type="checkbox"/> UNINC.			
DWG TITLE: UPPER CUTTER ASSY				
APPROVED BY: ENGR <i>[Signature]</i>	MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF: NEXT ORDER	
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE	REASON: REMOVED RIVETS IN FAVOR OF ADDITIONAL SCREWS			

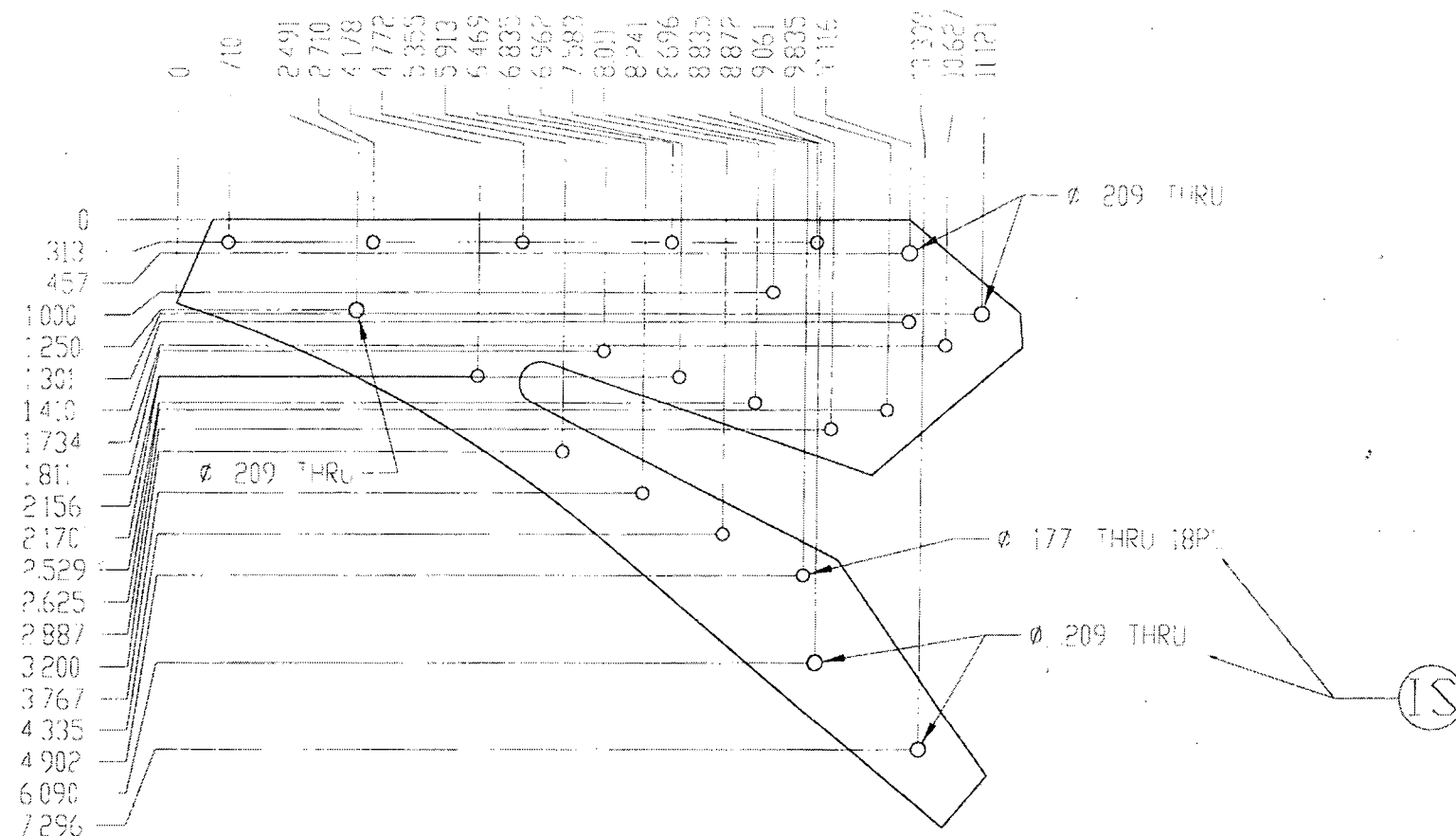
SHEET 1, VIEW 646.330L IS:

646.330L  
SHOWN EXPLODED

14	R	601.2765	18	SCREW	MS27039-0819
10	R	601.1541	18	LOCKNUT	MS21042L08
9	D	601.2766	3	RIVET	MS20470AD5-18
8	R	601.2764	36	WASHER	NAS1149FN832P
			.3301		
F/N TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION	
DOCUMENTS EFFECTED:				CHANGE CATEGORY	DER REVIEW REQUIRED
<input type="checkbox"/> MDL <input checked="" type="checkbox"/> INSTALL INSTRUC <input checked="" type="checkbox"/> ICA <input type="checkbox"/> FMS <input checked="" type="checkbox"/> BOM				<input type="checkbox"/> MAJOR <input checked="" type="checkbox"/> MINOR	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

107240

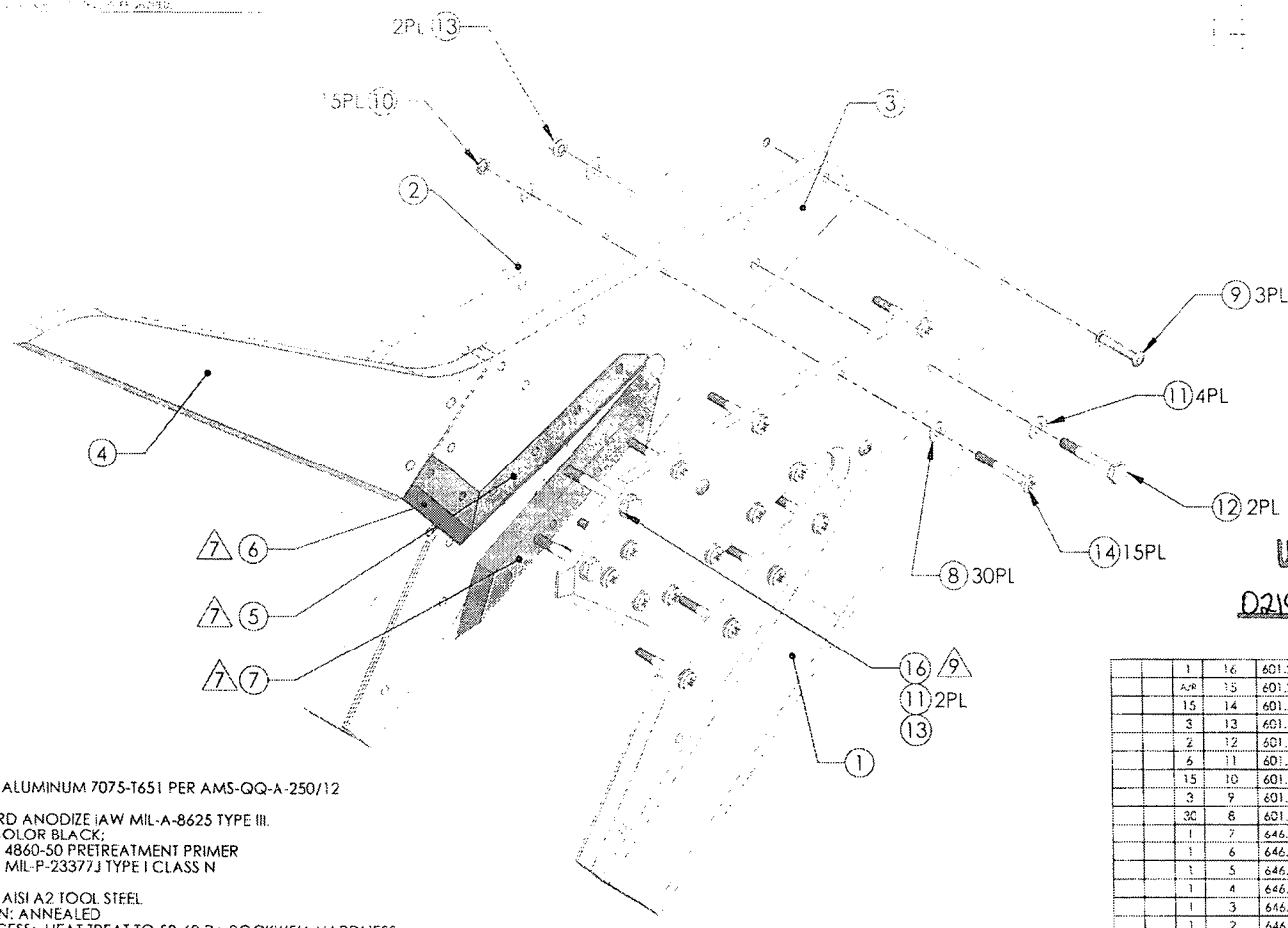
SHEET 3, SECTION VIEW A-A, IS:



SECTION A-A  $\frac{P}{.6}$

F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION

102840



UNINCORPORATED ECN(s)

02196, 03724

## NOTES:

1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12

2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III.  
CLASS 2. COLOR BLACK;  
CARDINAL 4860-50 PRETREATMENT PRIMER  
PRIME IAW MIL-P-23377J TYPE I CLASS N

3 MATERIAL: AISI A2 TOOL STEEL  
CONDITION: ANNEALED  
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS

4 FINISH: PRIME IAW MIL-P-23377J TYPE I CLASS N

5. DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED

6. IDENTIFY IAW MPP-120

7 APPLY F/N 15 AS REQUIRED TO ALL PAYING SURFACES OF F/N 5, 6 & 7 UPON ASSEMBLY

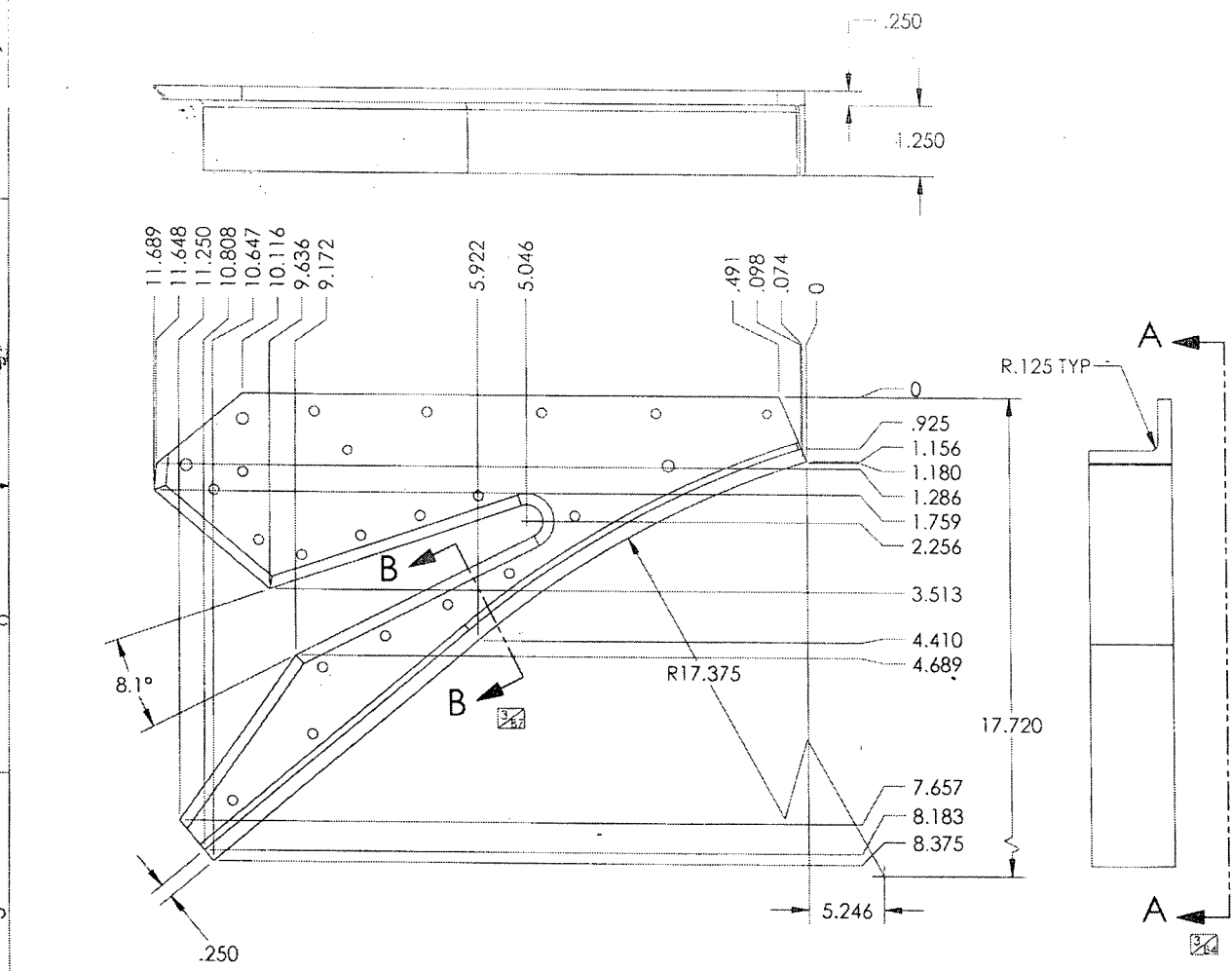
8 CUTTING EDGE INTENDED TO BE SHARP. DO NOT BREAK SHARP EDGE

9 INSTALL FASTENER FINGER-TIGHT

646.3301  
SHOWN EXPLODED

QTY	REV	REV #	PART #	DESCRIPTION	MAT'L	SPEC.
1	16	601.2834	BOLT	ANSI 148		
15	15	601.2045	RIV. LOCKTITE SPB			
15	14	601.2765	SCREW	WASHER 0818		
3	13	601.1624	LOCKNUT	WASHER 0818		
2	12	601.2763	BOLT	ANSI 148		
6	11	601.1607	WASHER	WASHER 0818		
15	10	601.1541	LOCKNUT	WASHER 0818		
3	9	601.2766	RIVET	WASHER 0818		
30	8	601.2764	WASHER	WASHER 0818		
1	7	646.3316	BLADE			
1	6	646.3315	BLADE			
1	5	646.3314	BLADE			
1	4	646.3313	UPPER GUIDE			
1	3	646.3312	CENTER PLATE			
1	2	646.3311	RH HALF			
1	1	646.3310	LH HALF			
1	1	646.3301	UPPER CUTTER ASSY			
QTY	REV	REV #	PART #	DESCRIPTION	MAT'L	SPEC.
PARTS LIST						
NEXT ASSY (S)				APICAL INDUSTRIES		
646.4000				2608 TEMPLE HEIGHTS DR.		
				OCEANSIDE, CA. 92056-3512 (760)724-5300		
				UPPER CUTTER ASSY		
				SET (CASE CODE) 0000 100		
				8 07/21/16 646.3300		
				SCALE NONE SHEET 1 OF 8		

102846

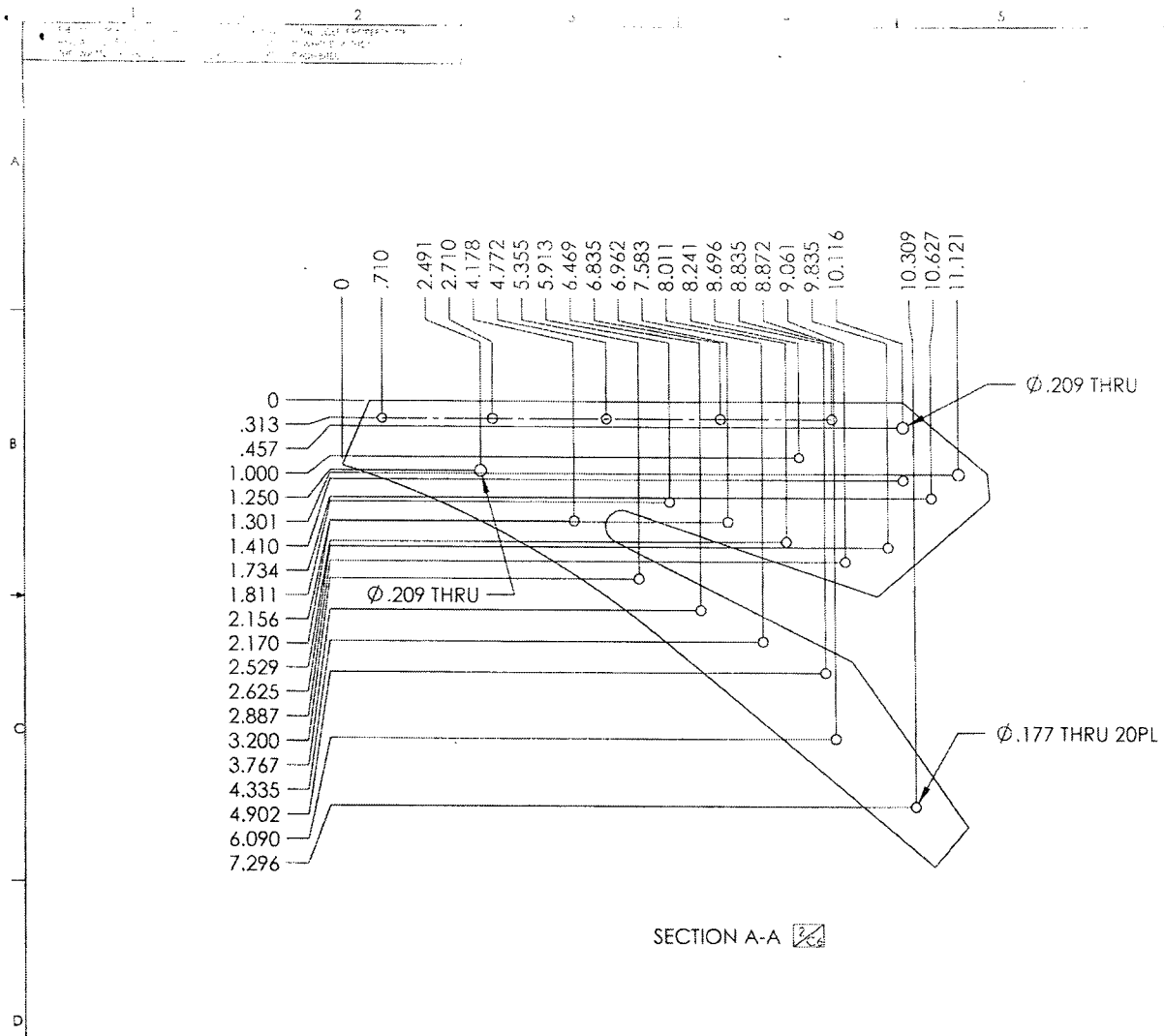


646.3310 SHOWN  
646.3311 OPPOSITE

APICAL INDUSTRIES	
2608 TEMPLE HEIGHTS DR.	
OCEANSIDE, CA. 92056-3512 (760)724-5300	
UPPER CUTTER ASSY	
DATE: 08-21-08	BY: J. M. J.
DRAWN BY: J. M. J.	CHECKED BY: J. M. J.
1:1	1:1
SCALE: NONE	SHEET: 2 OF 8



107840

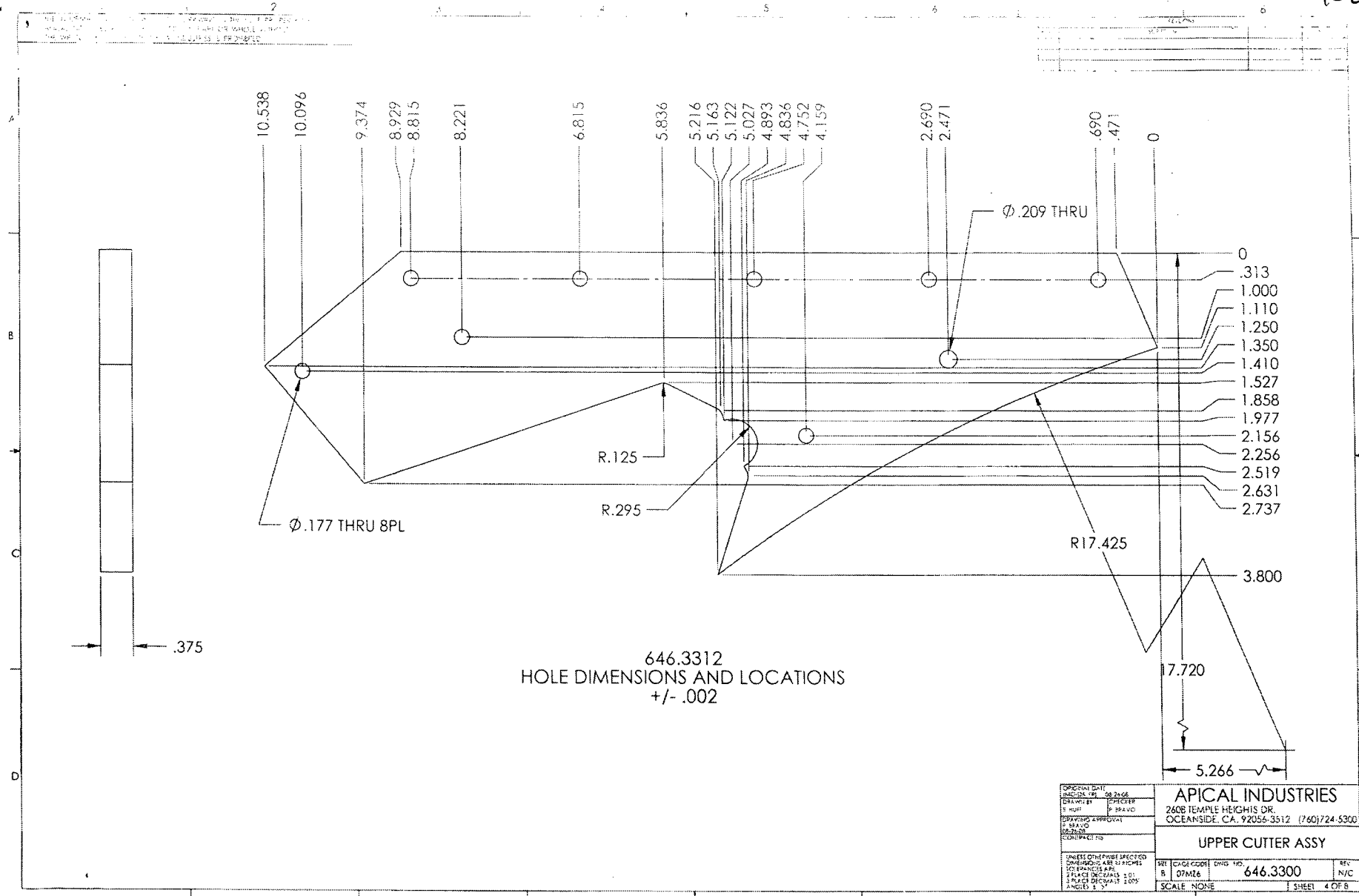


SECTION A-A

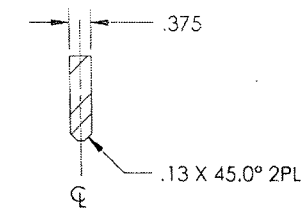
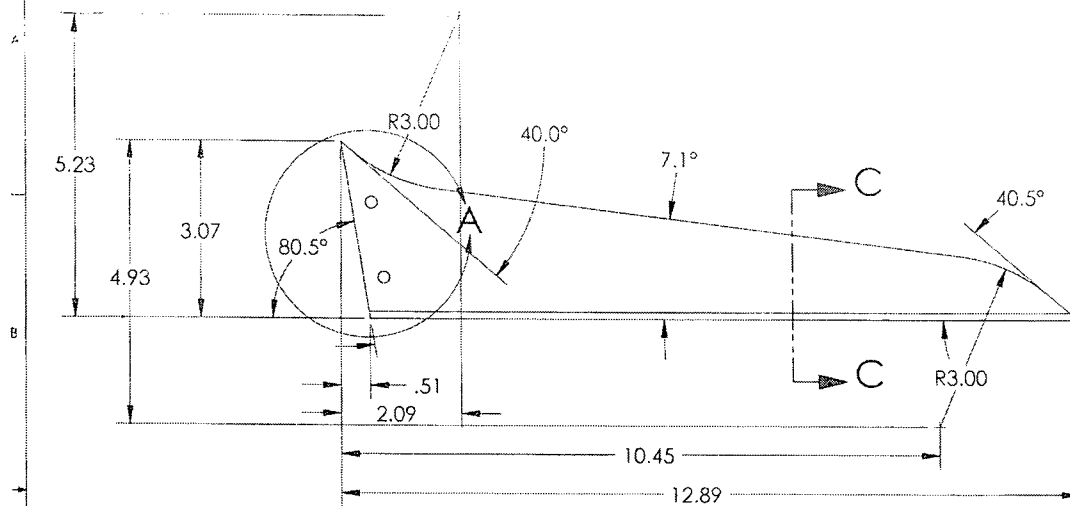
SECTION B-B

APICAL INDUSTRIES	
2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300	
UPPER CUTTER ASSY	
DATE: 10/10/01 REV: 1	
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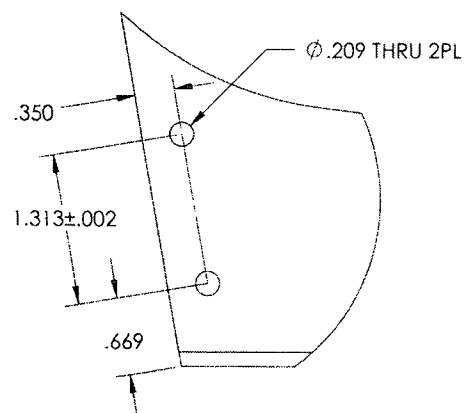
102840



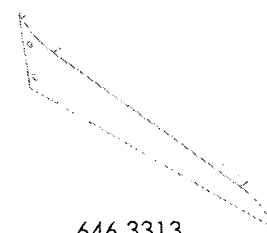
10224



SECTION C-C



DETAIL A

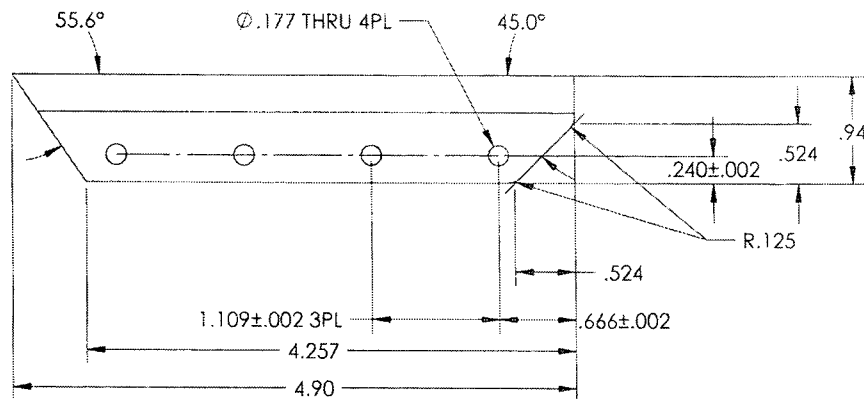


646.3313

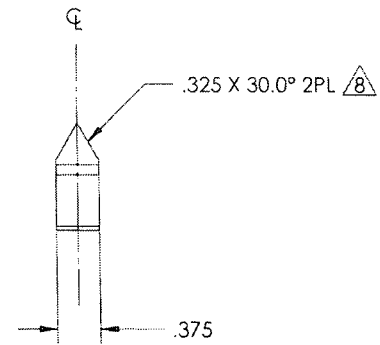
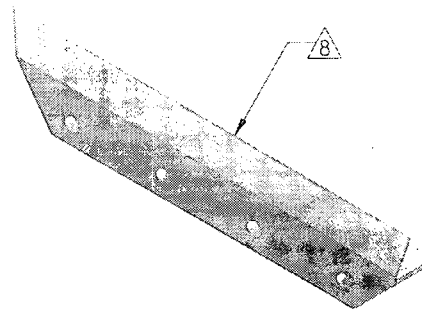
<small>           ORIGINAL DATE            DATE: 12-19-03            DRAWN BY: J. WILSON            S. KIM            DRAWING APPROVAL:            P. BRADY            DATE: 01-08-04            CHECKED BY:         </small>		<b>APICAL INDUSTRIES</b> 2408 TEMPLE HEIGHTS DR. OCEANSIDE, CA 92056-3512 (760)724-5300	
<small>           UNLESS OTHERWISE SPECIFIED            DIMENSIONS ARE IN INCHES            TOLERANCES ARE:            FRACTIONS DECIMALS ±.01            ANGLES ±.5°         </small>		SHEET: 5 OF 8 SCALE: NONE	DWG NO: 646.3300 REV: HFC

102840

A  
B  
C  
D

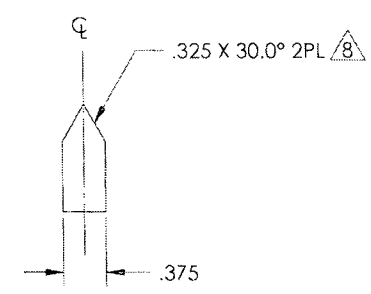
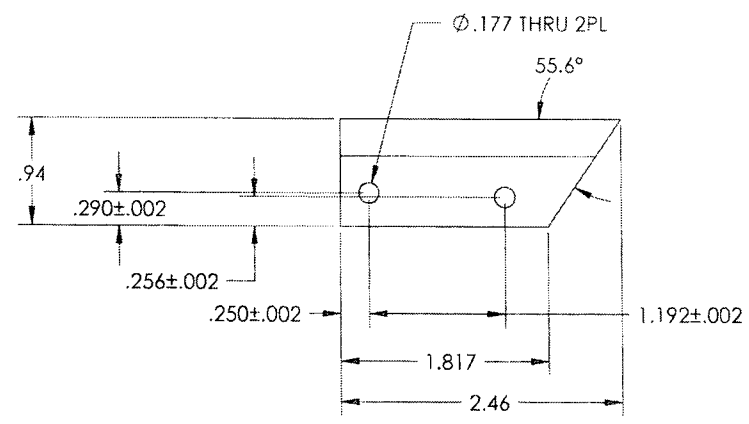
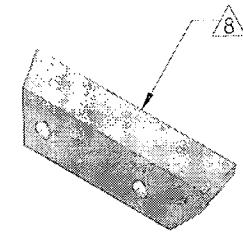


646.3314



DRAWING DATE DRAWN BY CHECKED BY IN CHARGE DRAWING APPROVAL OF BRANCH CONTRACTING	<b>APICAL INDUSTRIES</b> 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300 <b>UPPER CUTTER ASSY</b>	REV 1 07/14/26 646.3300 SCALE NONE	SHEET 6 OF 6
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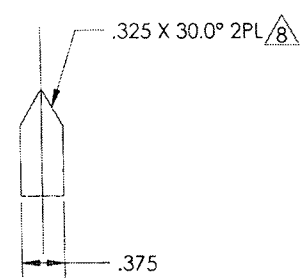
102840



646.3315

<small>           OPTIONAL DIMS            (MODIFY) 10-20-00            DRAWN BY: J. HICKER            S. HOFF            DRAWING APPROVAL:            P. HOFF            DATE:            CONTROL NO:         </small>		<b>APICAL INDUSTRIES</b> 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
<small>           UNLESS OTHERWISE SPECIFIED:            DIMENSIONS ARE IN INCHES            TOLERANCES ARE:            2 PLACE DECIMALS ±.01            3 PLACE DECIMALS ±.001            ANGLES ±.5°         </small>		<small>           SEE TAPING CODE            B 07ME6         </small>	<small>           DWG NO            646.3300         </small>
<small>           SCALE NONE         </small>		<small>           REV            N/C         </small>	
		<small>           SHEET 7 OF 8         </small>	

A large, dark, irregularly shaped object, possibly a piece of debris or a fragment, is shown against a light background. The object has a jagged, elongated shape with several small, light-colored circular spots or holes along its length. A thin line extends from the upper right portion of the object to a small, rectangular label containing the number '8'. The label is oriented horizontally and has a slightly distressed or torn appearance. The overall image has a grainy, high-contrast quality, typical of a photocopy or a scan of a physical document.



ORIGINAL DATE REVISED DATE: 08-20-09 DRAWN BY: J. HIGDON P. HIGDON CHECKED BY: P. HIGDON DRAWING APPROVAL P. HIGDON DATE: 08-20-09 CONTROL NO.	<b>APICAL INDUSTRIES</b> 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5303		
<b>UPPER RUTTER ASSY</b>			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DECIMALS AND FRACTIONS FRACTIONS DECIMALS = 1/16 FRACTIONS DECIMALS = 1/32 FRACTIONS DECIMALS = 1/64 ANGLES 5°	SRT: CAGE CODE 5 07M10	QTY: 100 <b>646.3300</b>	REV N/C
SCALE: NONE		SHEET 8 OF 8	



<b>DART AEROSPACE LTD</b>	<b>Work Order:</b> 102 870
<b>Description:</b>	<b>Part Number:</b>
<b>Inspection Dwg:</b> 646.3300 Rev: N/C	<b>Page 1 of 1</b>

### FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
7.296	+/- .005	7.2985	✓		H-6	31006
3.767	+/- .005	3.768	✓		"	"
0.457	+/- .005	0.458	✓		"	"
0.313	+/- .005	0.3145	✓		"	"
0.710	+/- .005	0.712	✓		"	"
6.469	+/- .005	6.471	✓		"	"
10.116	+/- .005	10.117	✓		"	"
10.309	+/- .005	10.310	✓		"	"
φ 0.177	+ .005 / - .001	φ 0.178	✓		Vern	GA-01
φ 0.209	+ .005 / - .001	φ 0.210	✓		"	"
0.250	+/- .005	0.246	✓		Mic	GA-03
1.250	+/- .005	1.250	✓		Vern	GA-01
R 0.125	+/- .005	R 0.125	✓		R-6	ref.
3.513	+/- .005	3.514	✓		H-6	31006
8.375	+/- .005	8.376	✓		"	"
0.250	+/- .005	0.247	✓		Mic	GA-03
8.1°	+/- .5°	8.1°	✓		Angle M.	CNC-02
11.689	+/- .005	11.690	✓		H-6	31006
11.250	+/- .005	11.251	✓		"	"
0.200 x 45°	+/- .005	0.200 x 45°	✓		Vern	GA-01

<b>Measured by:</b> J.A. 08	<b>Audited by:</b> [Signature]	<b>Preliminary Approval:</b>
<b>Date:</b> 13/07/08	<b>Date:</b> 13/07/08	<b>Date:</b>

Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	

10.04.15







A.T.G. Industries Inc.  
731, rue Industrielle Rd.  
PLATING DEPARTMENT  
Rockland, On K4K 1T2  
Canada

Ph: (613) 446-4544  
Fax: (613) 446-4556

### Pack List

Number: 62520

Date: 22-Jul-13

To

DART AEROSPACE LTD  
1270 ABERDEEN ST.  
HAWKESBURY, ON K6A 1K7  
Canada

Ship To


DART AEROSPACE LTD  
1270 ABERDEEN ST.  
HAWKESBURY, ON K6A 1K7  
Canada

Ph: 613-632-5200

Fax: 613-632-1185

Ph: 613-632-5200

Fax: 613-632-1185

Terms		Ship Via
Quantity	Description	Rev:
1 lot	Part: ASST 6 PCS D2224 RED ANODIZE MIL-A-8625 TYPE II CLASS 2 6 PCS D3299-1 BLUE ANODIZE MIL-A-8625 TYPE II CLASS 2 2 PCS D4410-043 BLACK ANODIZE MIL-A-8625 TYPE II CLASS 2 10 PCS 646.3311 9 PCS 647.9315 HARD ANODIZE BLACK MIL-A-8625 TYPE III CLASS 2 PRIME MIL-P-23377J TYPE I CLASS N Job: 20130455	Line:
Certificate of Conformance		
A.T.G. Industries certifies that all items in this shipment are in conformance with all requirements, specifications and drawings referenced in the purchase order.		
ISO 9001 : 2008 REGISTERED ATG SALES-2010 TERMS APPLY		
DATE: 22/7/13		
CERTIFIED SIGNATURE: 		
RECEIVER SIGNATURE: _____		